ANNUAL REPORTS
FOR
YELLOWSTONE NATIONAL PARK

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ANNUAL REPORT

FOR

YELLOWSTONE NATIONAL PARK

1931

During the years 1927 and 1928, due to shortage of funds, it was not possible to include the reports of the various superintendents in the annual report of the Director of the National Park Service and the reports were mimeographed. Again in 1931 shortage of funds makes mimeographing necessary.

Fifty copies of the Yellowstone annual report have been made for distribution to collectors who have the Yellowstone reports since the first issue and to others who are interested in having copies for reference purposes.

Five copies have been completed with photographs and have been furnished the Secretary of the Interior, the Director of the National Park Service, the Washington Office of the Park Service and two copies for the Yellowstone Library.

The illustrations are the work of Park Ranger William S. Chapman.

Roger W. Toll
Superintendent
Yellowstone National Park

ANNUAL REPORT FOR YELLOWSTONE NATIONAL PARK
1 9 3 1
Roger W. Toll, Superintendent

GENERAL

The mild temperatures and light snowfall of the Yellowstone during the past winter and continued hot dry weather of the summer presented a serious fire hazard and resulted in perhaps the worst fire year experienced in the park's history. The general belief had arisen that the Yellowstone forests were not subject to serious fires, having escaped extensive damage for the past ten or twelve years. However, the experience of the past summer has thrown this belief into the discard and it is now felt that the park faces the same fire hazards as do the other parks and forests. Several fires broke out in isolated localities, necessitating hard work on the part of the firefighters and considerable expense against the park appropriation. The largest fire, which started on July 17, burned some 18,000 acres in the Heart Lake (Basin Creek) area. Most of the area was burned during the first week. The fire was under control at the end of the second week, but work was continued for more than three weeks as the fire was not fully extinguished. The Bechler River region also had several bad fire scares. The combating of forest fires will cost in the neighborhood of $150,000 for the summer. Fortunately all of the fires were away from the main highways.

The unexpected cost of the forest fires necessarily had its effect on the appropriations and a number of projects suffered from lack of funds.

Along with a bad year, 1931 saw a decrease in travel and park operators complained of a poor business season. The general depression of the country was reflected in conditions in the park and an unusually large number of persons came to the park seeking employment.

When the travel season closed our records showed a decrease of 6,653 visitors over last year, or three per cent. While last year saw the first decline in travel since 1918, the continued depression of the country was noticeable in the number of park visitors. The general inclination on the part of visitors was to spend as little as possible and to seek the cheapest type of accommodations.

Marked improvement was made during the summer on the park roads and from every side favorable comment was received regarding the better condition of the highways. Several contracts for grading and oiling were let through the Bureau of Public Roads and the actual construction work under way resulted in some instances in slowing up traffic, but at no time during the summer was there any considerable delay to visitors on account of bad roads. The oiling of the highways

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Marked improvement was made during the summer on the park roads and from every side favorable comment was received regarding the better condition of the highways. Expecially noticeable were the newly oiled sections. Two views of newly oiled section between Thumb and Lake.

has tended to make motorists forget entirely the dust evil and the few completed miles of surfaced and oiled roads have indicated to the public the type of road which the Park Service plans to provide throughout the park.

Aside from the damage caused by forest fires, the Yellowstone Park Lodge and Camps Company suffered the loss by fire of its boiler room and laundry at Mammoth on October 18, 1930. The fire started through spontaneous combustion in the coal bin.

The park lost one of the men who had been most prominent in the development of park facilities when on February 4, 1931, Harry W. Child, President of the Yellowstone Park Hotel Company and Yellowstone Park Transportation Company, died at La Jolla, California. Mr. Child had been associated with the park for a great many years but had been in ill health for a considerable period. Mr. W. M. Nichols, Mr. Child's son-in-law, was made president of the companies.

Another old-timer passed away when on April 24, 1931, Harry (Packy) McFarland died of heart failure at Livingston, Montana. "Packy" had served for more than fifteen years in the Yellowstone and had over thirty years of Government service to his credit.

Park visitors report seeing many of the park animals, particularly moose, which have become more plentiful and appear to have lost their fear of man and automobiles. The bears infest every campground and large numbers are seen along the highways. The bear problem has really become acute and many reports of damages to property and personal injuries have been received. It is evident that some drastic measures must be taken to protect park visitors from bears as without doubt many people are curtailing their visits and some are even avoiding the park because of rumors regarding the destruction by bears.

Director Albright expected to visit the park in early August but, due to the necessity of undergoing an operation for appendicitis in Alaska while visiting there with the Subcommittee of the House Appropriation Committee, the trip necessarily had to be delayed. However, he did visit the park in September.

ADMINISTRATION

Personnel.- The permanent personnel consists of Roger W. Toll, Superintendent; Guy D. Edwards, Assistant Superintendent; Joseph Joffe, Assistant to the Superintendent; Benjamin A. Hundley, Chief Clerk; Francis W. Watson, Disbursing Clerk; Parke W. Soule, Senior Clerk and Bookkeeper; Anna E. Greer, Files and Personnel Clerk; Margaret Sabin and Mary Markham, Clerk-Stenographers; Virginia Goettlich, Timekeeper; Keith Neilson, Purchasing Clerk, and 1 clerk-stenographer in the Chief Ranger's office. This force is augmented during the summer season with 2 clerk-stenographers, 2 statistical clerks, 1 publicity clerk and 1 card clerk. The maximum number of employees on the payroll at one time was 1378 on a per diem basis and 150 appointed personnel.

Aside from the damage caused by forest fires, the Yellowstone Park Lodge and Camps Company suffered the loss by fire of its boiler room and laundry at Mammoth on October 18, 1930. The fire started through spontaneous combustion in the coal bin. Top view shows active fire; lower view result of fire.

Appropriations. - Appropriations for the fiscal year are as follows:

Roads & Trails, National Parks.....	$ 2,834,954.05
Donations, National Park Service.....	31,100.00
" Extension of Winter Feed Facilities	2,300.00
Extension of Winter Feed Facilities.....	16,440.00
Emergency Reconstruction & Fighting Forest Fires, 1930-31.....	839.05
Forest Protection & Fire Prevention, 1930-31..	9,640.00
*Yellowstone National Park, 1930-31.....	497,935.00

* $830 additional reserved for Washington Office expenditures and $2050 as an unalloted reserve; $2870 also transferred to Field Headquarters.

Revenues for 1930.- Revenues aggregating $259,810.09 were received from the following sources during the fiscal year and deposited in the Treasury of the United S tates as Miscellaneous Receipts:

Automobile and motorcycle permit fees.....	$ 169,527.00
Franchise and permit fees.....	84,484.90
Electric Current.....	3,791.30
Water.....	545.88
Miscellaneous.....	1,461.01

Franchises and Permits.- On January 14, 1931, C. A. Hamilton's contract for maintenance and operation of general stores in the park for 20 years was approved. This superseded former contract granted him under date of March 23, 1923, covering a period of 10 years.

Eleven saddle horse permits, and 5 permits for hauling over park roads to Cooke, Montana, from Gardiner, Montana, were issued during the year.

TRAVEL

Park visitors this year totaled 221,248 as compared with 227,901 last year, a decrease of 6,653. The rail travel figures were 18,929 as compared with 26,845 last year, a decrease of 7,916. A comparison of rail figures of this season and last year is as follows:

Gateway	1930	1931	Gain	Loss
North.....	9209	6693		2516
West.....	12961	8872 *		4089
East.....	4585	3203		1382
South.....	90	# 161	71	
Total	26845	18929	71	7987

Note: Footnotes appear on page 4.

One of the park's old-timers, Harry (Packy) McFarland died of heart failure at Livingston, Montana on April 24, 1931. "Packy" had served for more than fifteen years in the Yellowstone and had over thirty years of Government service to his credit. Burial was in Livingston, Montana with Sam T. Woodring, B. C. Lacombe, Joe Douglas, William Wiggins, Roy Brown and Harry Trischman, all Park Service employees, acting as pall bearers. Scene at the grave.

*Rail travel accredited to the West Entrance during the tourist season of 1931 consisted of 6657 persons via the Oregon Short Line Railway (Union Pacific System), 1261 via the C. M. St. P. & P. (Gallatin Gateway terminal of the Milwaukee), and 331 persons from the Bozeman terminal of the Northern Pacific, plus 623 temporary employees of the Government and park operators.

#Rail travel through South Entrance consists of forty persons entering from Victor, Idaho, on the Union Pacific System and 121 entering at Lander, Wyoming, from the Chicago and North Western Railway.

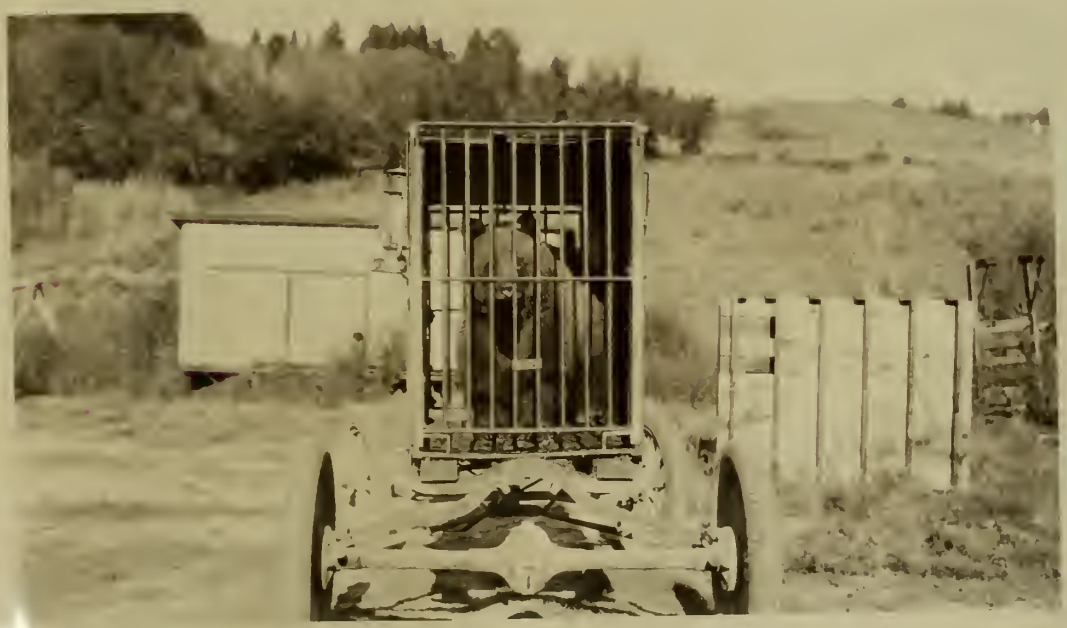
Automobile visitors by entrance gateways, as compared with last year are as follows: (This travel is exclusive of motorcycle and preseason automobile visitors.)

Gateway	1930	1931	Gain	Loss
North	36930	41304	4374	
West	71565	70229		1336
East	64825	67968	3143	
South	21451	22141	690	
Total	194771	201642	8207	1336

The number of cars and visitors reported at developed public camp grounds during the season of 1931 are as follows:

Designated Developed Camp Grounds	Cars	Campers
West Yellowstone	605	1918
Fishing Bridge	16664	52825
Old Faithful	9634	30540
Mammoth	4630	14677
Lake	1138	3607
Canyon	2601	8245
West Thumb	1900	6023
Norris Junction	701	2222
Madison Junction	1137	3604
Tower Falls	1020	3233
Bridge Bay	258	818
Total	40288	127713
Approximate number of cars and campers using undeveloped campsites	2500	7900

In order to get rid of dangerous and destructive bears they are trapped and "taken for a ride" to some point in the park infrequently inhabited by campers or shipped to various zoos throughout the country. A special trap, consisting of a large culvert pipe mounted on an old Ford chassis, has been built for transporting Bruin. Top view shows trap attached to Ford car while lower view shows young grizzly in box cage ready for transportation to the zoo at Salt Lake City, Utah.



Total Season Travel by Entrance Gateways

1931 and 1930

Gateway	Rail Visitors	By Automobile Cars	By Automobile Visitors	By Motorcycle Cars	By Motorcycle Visitors	Misc. walking, horseback &	Pre-season visitors	Total Visitors
1931								
North....	6693	13311	32474	23	32	217	8798	48,214
West.....	8872	21407	63419	56	72	270	6738	79,371
East.....	3203	21825	63230	67	100	147	4638	71,318
South....	161	7093	21257	13	15	43	869	22,345
Total	18929	63636	180380	159	219	677	21043	221,248
1930								
North....	9209	13419	36930	25	36	206	3618	49,999
West.....	12961	22478	71565	64	87	341	1464	86,418
East.....	4585	20746	64825	70	103	203	0	69,716
South....	90	6765	21451	21	29	137	61	21,768
Total	26845	63408	194771	180	255	887	5143	227,901

EDUCATIONAL DEPARTMENT

The 1931 staff consisted of Alfred H. Povah, Park Naturalist, Norman W. Scherer, Assistant Park Naturalist, Herma G. Albertson, Junior Park Naturalist, and 22 ranger naturalists. Dorr G. Yeager's services as Park Naturalist terminated at the close of June 19, when he was transferred to Rocky Mountain National Park; Mr. Scherer was appointed Assistant Park Naturalist on July 16, 1931, and Miss Herma G. Albertson succeeded Newell Joyner as Junior Park Naturalist on May 8, 1931. The summer activities of this department consisted of guide trips, lectures and auto caravans and the following table shows the number of visitors contacted in this way:

In order to accurately record the early life of a black bear Assistant Park Naturalist Dorr G. Yeager obtained one at Old Faithful shortly after birth and brought it to headquarters with him, giving it a home in the kitchen of his house. "Barney", as he became known, soon had the run of the house and afforded much pleasure and amusement for his keepers, as well as a scientific study of his habits, food, etc. Top view shows Mrs. Yeager with "Barney" at meal time and lower view shows "Barney at the telephone".

Summer Activities - Educational Department

Station	Field Trips		Lectures		Museums	Auto Caravans		
	No.	Att.	No.	Att.	Att.	No.	Cars	Att.
Old Faithful	429	30990	257	414247	108160	82	8009	32180
Lake	150	4836	151	13658				
Mammoth	362	12730	247	25883	51188	80	2263	8302
Canyon	215	8813	135	28652		39	609	1883
Norris	243	12096	202	8705	45834			
Fishing Bridge	74	2481	76	18024	4030			
West Thumb	60	8010	41	1883				
Mt. Washburn			80	38242				
Madison Jct.	16	96	13	468	6852			
Tower Falls	30	266	113	3871		6	10	29
Total.....	1579	80318	1315	553633	216064	207	10891	42394

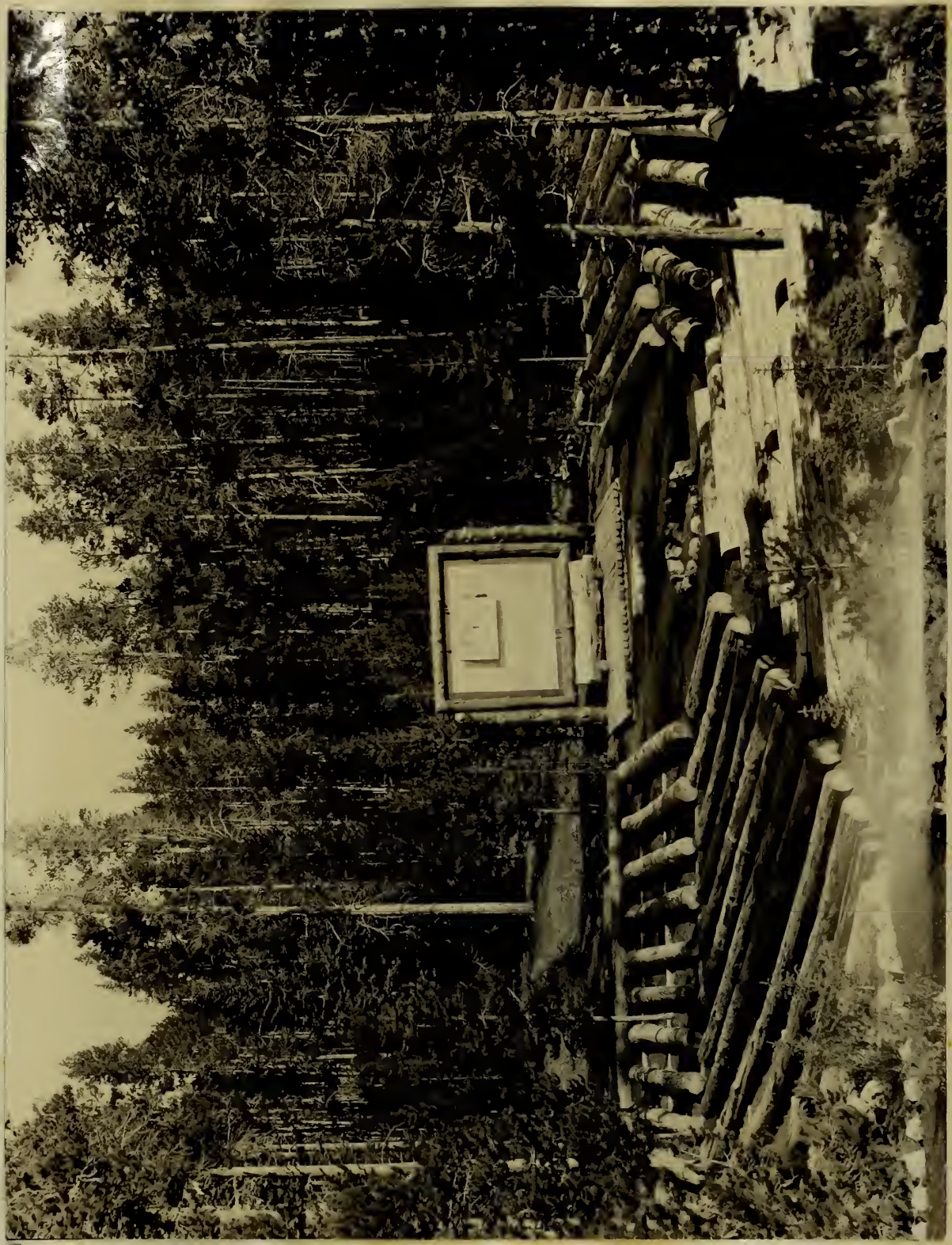
The hall of birds and the information desk at the Fishing Bridge Museum were opened on A ugust 1; the geology room is partially prepared. A short nature trail was constructed at Norris, a self-guiding nature trail has been installed at Mammoth in Clematis Gulch and a new nature trail has been constructed at Old Faithful. A hike to the top of Purple Mountain has proven quite successful at Madison Junction. An auto caravan at Canyon was started this year. An impromptu auto caravan, to view various geysers scheduled to erupt in the afternoon, has proven highly successful at Old Faithful. Considerable work was done on pasting photographs in albums, numbering the negatives, and keeping a record of subject, date and photographers' names. Photographs on hand total about 10,000. Government and other publications totaling 9,753, with a value of $4,335.45, have been sold in the various information offices.

An out-of-door lecture was held at Mammoth Hotel.

Nineteen magazines, exclusive of Nature Notes, from various parks, have been received regularly, and fifty-six books and approximately seventy-five bulletins and pamphlets have been either donated or purchased for the library. Dr. Carl P. Russell has contributed a "Bibliography of the History of Scientific Research in Yellowstone Park" and additions have been made to the "Fauna Bibliography of Yellowstone."

The greater number of museum accessions have been Indian specimens, principally those obtained from J. P. V. Evans of Livingston, Montana, and the Everson collection through George Pratt of New York City. Maps and photographs of historical value have been donated by various interested persons.

The hall of birds and the information desk at the Fishing Bridge Museum were opened on August 1, 1931. View of hall of birds. Note particularly rustic structure of doorway. Herbert Maier of the American Association of Museums was the architect for this building, as well as the other museums in this park constructed with funds donated by the Laura Spelman Rockefeller Foundation.



The new Fishing Bridge museum affords a splendid opportunity for contacting visitors and this structure, in view of its location in the Fishing Bridge auto campground, is destined to become the most popular of all the park museums. A fine outdoor amphitheater, adjoining the museum, is to be used for illustrated lectures and for campfire gatherings. View of outdoor theater with rustic screen.

GEYSERS AND HOT SPRINGS

Most notable among the changes at Mammoth Hot Springs has been the recurrence of activity on Old Angel Terrace, the increased activity of Diana and the outbreak of two new springs above Jupiter Terrace in close proximity to the Terrace Road. The opening of the season found Minerva almost extinct, and it has again become active. White Elephant and Narrow Guage still remain practically inactive. Norris and Old Faithful Geyser Basins have both evidenced increased activity in the eruption of Ledge Geyser at Norris and Splendid and Whistle Geysers at Old Faithful. Splendid played on July 28, 1931, for the first time since 1892, to a height of 100 to 150 feet for five minutes.

PETRIFIED TREE EXCAVATIONS

Scout-Naturalists from various councils in California spent three weeks in Yellowstone in July excavating petrified trees under the direction of members of the Milwaukee Public Museum. Five standing and several prostrate trees and a limb or branch 18 feet long were uncovered for exhibition purposes

PROTECTION DEPARTMENT

General.- A change in the system of organization of the Protection Department became effective on May 1. The system of supervisory territories is discontinued and ten districts were established, with a district ranger in charge of each. In winter, districts are combined to make a total of eight. Assistant Chief Rangers now work over the entire park. One has charge of the office and general administrative matters in the absence of the Chief Ranger, one has charge of all forestry and fire protection, and one is in charge of general field work. The remaining permanent rangers were assigned to special details and ranger districts as occasion demanded.

The Protection Department has had an unusually busy year, starting first early in the spring on a large insect control project in the Bechler River district. The fires followed next in line and all rangers who could possibly be spared from their regular duties were used on fire suppression work. Though most of the permanent rangers and fifteen of the temporary rangers were on fire suppression work, the usual summer activities were carried on by the remaining members of the Protection Department with very good results.

Personnel.- Personnel consists of George F. Baggley, C hief Ranger, three Assistant Chief Rangers, twenty-five permanent rangers and forty-three temporary rangers.

Winter Activities.- Winter activities consist of the usual and special patrols for the protection and observation of the wild life and waterfowl; also, for the observation of snow depths, weather conditions, river gaging stations, study and research on assigned subjects (game),

The auto caravan idea, which originated with trips over the Hot Spring terraces at Mammoth, has spread to Old Faithful and Canyon and has proven highly successful at all points. The caravans at all points last summer included 10,891 cars, containing 42,394 persons. View shows auto caravan proceeding up-hill near Liberty Cap at Mammoth Hot Springs.

maintenance of telephone lines, care of buildings, feeding of game, predatory animal control and special assignments to game study and forestry work.

Summer Activities.- Summer activities consist of manning the checking stations, traffic control, fire prevention and suppression, law enforcement, dispensing information, contacting people (special parties), rationing, repairing, etc., of snowshoe cabins, trail maintenance and construction, fish propagation and special assignments.

Forestry.- Intensive measure were taken during the months of May and June toward the control of Mountain Pine beetles in the Bechler River region. This was followed by several aerial surveys and ground examinations to determine the location and extent of insect infestations throughout the park. Areas in the Gallatin, West Yellowstone, Red Mountain, Big Game Ridge, Chicken Ridge and Bechler River regions were found to be infested quite severely.

The type map and insect survey project which was begun in 1930 is being carried on again and the part to be mapped this year lies directly east of the Madison Junction-Old Faithful road approximately ten miles, and east of Bechler River to the Snake River road.

A crew of five men was organized in June to cut and burn red-topped trees along the roadside around the loop road. Approximately 2500 trees were cut between Obsidian Cliff and Madison Junction when the funds for this work were exhausted and the work discontinued.

At Fishing Bridge and Old Faithful approximately 200 trees, ranging in height from two to five feet, were planted on barren areas. These experiments in artificial reforestation appear to be quite successful.

The revised regulations governing timber operations in the park require considerable time of the District Rangers in marking timber and supervising the slash disposal from cuttings along road and telephone line rights-of way, cuttings made for building purposes and the cutting of wood used for fuel at the hotels, lodges and for other purposes.

Forest Fires.- A total of 112 fires were suppressed in the Yellowstone this year, burning a total of 20,605 acres. Most of these were small fires caused by visitors leaving campfires and throwing cigarettes and matches out of cars. Every fire was unusually dangerous this year due to the drought conditions which have not been equaled for thirty-four years, according to Weather Bureau records in Yellowstone Park. The larger fires and more dangerous ones were caused by lightning. It was necessary to use fire suppression crews on 25 of these fires; the largest of these were the Heart Lake (Basin Creek) fire which burned an area of 18,756 acres and on which there were 700 fire fighters at one time; the Chipmunk Creek fire on the north end of Yellowstone Lake, burning approximately 1200 acres and finally put out by rain and snow, and the Gallatin fire consisting of about 400 acres.

Intensive measures were taken during the months of May and June toward control of Mountain Pine beetles in the Bechler River region. This was followed by several aerial surveys and ground examinations to determine the location and extent of insect infestations throughout the park. Areas in the Gallatin, West Yellowstone, Red Mountain, Big Game Ridge, Chicken Ridge and Bechler River regions were found to be infested quite severely. Top view shows oil being sprayed on burning trees in the Bechler River region and lower view Mountain Pine beetle infested trees being burned, burning-standing method.

A total of 112 fires were suppressed in the Yellowstone this year, burning a total of 20,605 acres. The larger fires and more dangerous ones were caused by lightning. Two views of the Heart Lake (Basin Creek) fire which burned an area of 18,756 acres and on which there were 700 fire fighters at one time.

Thirty men were sent to aid on the Gravel Creek fire in the Teton National Forest, which threatened to enter Yellowstone Park along the south boundary line in the Thorofare country. This fire came within four miles of the park boundary.

The entire ranger personnel as far as possible was used on fire protection work. Valuable assistance was given us by the Forest Service in supplying equipment and Forest Service officers. Aid was also given by Superintendent S. T. Woodring of the Grand Teton National Park who sent a crew of 25 men fully equipped. Co-operation and further aid were given us by all the public utility operators in Yellowstone Park.

Trail Construction, Maintenance and Improvements.- New construction consists of ten miles to the summit of Mt. Holmes, seven miles on the south fork of Middle Creek and twelve miles in the Gallatin district. The last two trails mentioned were constructed by the boundary survey party under Mr. W. R. Bandy. Each district carried on minor improvements, new construction and clearing, which work was halted on account of the Basin Creek fire.

Buffalo Ranch Activities.- Buffalo ranch activities consisted mainly of care and keep of the buffalo herd, repair and maintenance of equipment, irrigation and cultivation of hay fields. At this ranch 501 tons of hay and 28 tons of cottonseed cake were fed to about 750 head of buffalo last winter. Hay harvested at this ranch this year was 270 tons as compared with 150 tons last year and 500 tons in 1929. Due to our hay shortage, approximately 150 tons will be cut on Pelican meadows for feeding the buffalo this winter.

Mr. Burton C. Lacombe who served in Yellowstone since 1916 and served as Chief Buffalo Keeper since 1919 was transferred in May to the position of Custodian at the Craters of the Moon National Monument. Mr. Lacombe had passed the retirement age for buffalo keepers. He was succeeded as Chief Buffalo Keeper by Assistant Chief Ranger Joseph Douglas who has served in Yellowstone Park since September 5, 1918.

Hay Ranches.- The feeding of wild game was carried on at the Slough Creek, Yancey and Gardiner ranches. The Protection Department horses were also fed at the Yancey ranch. At these three ranches 238 tons of hay were consumed as compared with 555 tons of hay last year and 302 tons in 1929. There are on hand 205 tons of hay in addition to this year's harvest of 534 tons. 196 tons of hay were harvested at Upper Slough Creek ranch. 208 tons of hay were harvested at Lower Slough Creek ranch and 60 tons at Gardiner ranch, and 70 tons at the Game Preservation ranch. A total of 739 tons of hay were fed to game during the winter as compared with 1075 tons last year.

Predatory Animals.- During the past winter with snow conditions considerably below normal, which in turn made easy traveling for the coyote and extremely hard traveling for the rangers, a total of 98 coyotes were destroyed, as compared with 135 last year and 288 in 1929.

Buffalo Ranch activities consisted mainly of care and keep of the buffalo herd, repair and maintenance of equipment, irrigation and cultivation of hay fields. At this ranch 501 tons of hay and 28 tons of cottonseed cake were fed to about 750 head of buffalo last winter. Both views show buffalo on their winter feed ground at the buffalo ranch.

Wild Life of the Park.- Last winter was one of the mildest in the history of Yellowstone Park. Consequently the game came through in very good condition. However, due to the light snowfall, making it possible for all animals to roam the park at will, it was impossible to secure an accurate game count. In 1929 there was inaugurated a monthly game census system in lieu of the annual game count. In view of the excellent results obtained last year this system was again used this year with satisfactory results and it is proposed to carry on these monthly counts in future game censuses in Yellowstone National Park. Wild life conditions as observed and reported by park rangers throughout the year are summarized in the following table:

	Actual Counts		Number Estimated		Increase		Condition	Losses
	1930	1931	1930	1931	1930	1931	1931	1931
Antelope	510	646	650	646	Yes	Yes	Fair	Man 1; predatory 13.
Buffalo (Mount.)	27	10	35	35	Possible	No	Excellent	
Buffalo (Lamar)	1097	1182*	1097	1182#	Yes	Yes	Excellent	Winter kill 8 man 1.
Mount'n Sheep	125	101	150	150	Yes	No	Poor	Accident 1.
Moose	198	54	700	700	Yes	No	Excellent	Illegal kills 9.
Elk	9380	7696	10600	10600	No	No	Excellent	Winter k'l 14 unusual 1.
Deer	778	706	800	800	No	No	Fair	Winter k'l 17 man 6; disease 1; predatory 2.
Bears (Grizzly)	150	121	160	180	Yes	Yes	Excellent	Museum specimen
Bears (black)	440	294	490	465	Yes	Yes	Excellent	Accident 3; cripples 5; dangerous 20; cubs 10.

* Does not include 16 shipped and 95 slaughtered.
\# Does not include 250 for this year's calf crop.
NOTE: Losses cover entire year.

Mr. Burton C. Lacombe, who served in the Yellowstone since 1916, acting as Chief Buffalo Keeper since 1919, was transferred in May to the position of Custodian of the Craters of the Moon National Monument. He was succeeded as Chief Buffalo Keeper by Assistant Chief Ranger Joseph Douglas.

Top view shows Lacombe (left) and Douglas (right) at the Buffalo Ranch.

Lower view shows buffalo slaughter racks and truckload of buffalo meat at the Buffalo Ranch.

There have been 87 bear bites and 387 damages reported. Seventy-five are hearsay reports on which definite data cannot be secured. Numerous other complaints have been filed in which no damages have been reported.

Bears, Black and Brown.- The bear count this year is 465 as compared with 490 last year and 440 in 1929. The bear situation is becoming a more serious problem every year and some control measures will have to be instigated in the very near future.

Bears, Grizzly.- Large numbers of grizzlies, all in good condition, were seen evenings during the summer at the bear feeding grounds at Old Faithful, Canyon and Lake. Seven grizzly bears were shipped to various parks and zoos throughout the country. Comparative counts: 1930, 167; 1931, 180.

Grizzlies have caused some trouble in construction camps and have wrecked two snowshoe cabins. No injuries are accountable to these bears.

Smaller Animals.- Smaller animals, such as beaver, marten, marmots, squirrels and snowshoe rabbits are numerous throughout the park and are a source of great pleasure to visitors.

Waterfowl.- Ducks, geese and other birds were observed in the usual numbers throughout the past summer and fall. Estimates show a total of 350 pelicans on Yellowstone Lake. This estimate includes 49 young birds which were counted on Molly Island the forepart of July.

Fish Planting.- The following table gives the operations of the Bureau of Fisheries at the Lake Hatchery and Mammoth rearing pools for the year 1931:

Statement of Operations of Bureau of Fisheries
Lake Hatchery

	Eggs		
Take Season			17,050,000
Egg loss		2,818,000	
Shipments, Bureau of Fisheries account		7,341,000	
Park Service:			
Glacier Park	1,000,000		
(a)Ashton, Id.	250,000		
Retained for hatching at "Lake Hatchery"	6,091,000		
	7,341,000	7,341,000	17,500,000

(a) Shipped to Ashton Hatchery for hatching and planting in Bechler River District.

The feeding of wild game was carried on at the Slough Creek, Yancey and Gardiner ranches. At these ranches 238 tons of hay were consumed as compared with 555 tons of hay last year and 302 tons in 1929. Most of the hay was consumed by elk, of which there are estimated to be 10,600 in the park. Views show elk on winter feed grounds at Slough Creek.

During the past winter with snow conditions considerably below normal, which in turn made easy traveling for the coyote and extremely hard traveling for the rangers, a total of 98 coyotes were destroyed, as compared with 135 last year and 288 in 1929. Top view shows coyote in snow and lower view porcupine on winter jaunt.

Statement of Operations of Bureau of Fisheries (Cont.)

Fish		
Eggs retained for hatching at "Lake"		6,091,000
Distributed Yellowstone Lake and tributaries to date	2,798,000	
(b) On hand August	2,951,000	
	5,749,000	
Shipped Bureau of Fisheries acct.	100,000	
Fry loss to date	242,000	
	6,091,000	6,091,000

(b) Includes 195,172 at Mammoth pools.

ENGINEERING DEPARTMENT

This department is in charge of Park Engineer C. A. Lord, with supervision over road and trail maintenance and construction and general engineering control of other types of construction projects.

The road system comprises 310 miles of highway within the park boundaries and approximately 60 miles in the east and south approach roads that are maintained by park forces. Maintenance work is carried on from twenty permanently established road camps at suitable points in the park, each section under the direction of an experienced foreman and the necessary complement of men and equipment. In addition to the general routine maintenance work, all the main loop roads, and in addition 7 miles of the south entrance road immediately below the park boundary have been given oil treatment either of the dust prevention type or the light road mix treatment, as the volume of traffic or the condition of the roadbed warranted.

Approximately 40 additional miles of roadside cleanup have been completed with project funds since the last report, making a total of 135 miles of this work to be maintained from our regular maintenance fund.

Force account road construction has been confined to minor betterments at widely separated points, consisting of the reconstruction of sharp curves and raising of grade levels on such sections as were in need of immediate repair but would not be reached for several years in the program of permanent reconstruction. Twenty miles of the West Gallatin road section were surfaced with crushed rock and an armor coat of asphalt treated material placed on 10 miles of the Madison-West Yellowstone section which was oil processed last season.

Approximately 40 additional miles of roadside cleanup have been completed with project funds since the last report, making a total of 135 miles of this work to be maintained from our regular maintenance fund. Views of sections between Mammoth Hot Springs and Norris where roadside cleanup has been completed. The sloping work on this section is particularly effective.

Improved trails and additional parking areas have been constructed at various points in the park where badly needed, more especially at the formation and utility areas at Old Faithful, where emulsified asphalt has been used as a dust preventative on the trails and walks.

The site of the bear feeding ground at Canyon Junction was transferred from the area back of the hotel to a new location on Otter Creek. This change involved the construction of three-quarters of a mile of road, installation of rustic seats for spectators, and the construction of a concrete feeding platform with the necessary water and sewerage facilities.

Construction of the new intake and 2 miles of welded steel pipe line between Glen Creek and the reservoirs was completed early in the season with a decided improvement in the capacity of the Mammoth water system.

A complete modern sewer system has been planned for the Mammoth area, programmed as a two year project. This season's work completed the disposal plant and approximately forty per cent of the mains and service lines.

The following road projects constructed by contract and handled by the Bureau of Public Roads have been completed: Project 1-B-2, B-3, Norris Madison, 8.97 miles; and Project 9-B, Artist Point, 1.6 miles.

The Canyon Junction-Tower Junction and East Entrance projects are fast nearing completion as grading projects, and in addition the East Entrance and Obsidian Cliff-Firehole projects will be surfaced and oil processed by the end of the season.

Contracts were let late in the season for the construction of the Tower Falls-Blacktail Deer Creek project, 1-G-2, 1-H-1, 13.6 miles; and Terraces-Obsidian Cliff project, 1-A1, 1-A-3, 9.4 miles.

SANITATION DEPARTMENT

This work is carried on under the supervision of H. B. Hommon, of the United States Public Health Service, and under the direct charge of William W. Wiggins. Mr. Hommon made a thorough inspection of our entire operations in June and August and outlined necessary corrective measures. Mr. Wiggins makes regular sanitary inspections as outlined by Mr. Hommon.

The construction work this year consisted of the following: Completing laying the new steel pipe line 10,500 feet long on the Mammoth water system, including the new intake at Glen Creek. This work was begun the previous year. Enlarging the Fishing Bridge water system by laying 500 feet of 3 inch water pipe, 700 feet of 2-$\frac{1}{2}$ inch water pipe and 2,020 feet of 2 inch water pipe; laying 2,000 feet of 3-$\frac{1}{2}$ inch water pipe at new utility buildings at Old Faithful; construction of

Improved trails and additional parking areas have been constructed at various points in the park where badly needed, more especially at the formation and utility areas at Old Faithful, where emulsified asphalt has been used as a dust preventative on the trails and walks. Two views of this type of walk constructed at Mammoth from the Nichols' tennis court to the Mammoth Lodge.

At the formation and utility areas at Old Faithful improved trails and additional parking areas have been constructed, emulsified asphalt being used as a dust preventative on the trails and walks. Top view shows newly constructed walk at Old Faithful Lodge and lower view emulsified asphalt trail on the Old Faithful formations.

new sewer system at Fishing Bridge to take care of increased developments at that area. System included excavation and laying of approximately one mile of 8 inch and 10 inch sewer line, new sewage disposal plant and trenches; construction of one comfort station at Mammoth. Began construction of new incinerator at Thumb. In addition, 16 water systems, 20 sewer systems, 5 incinerators and many campgrounds at various places in the park were operated and maintained by this department. The heating system at Mammoth, which includes 9 steam boilers, was also operated and maintained by this department.

ELECTRICAL AND TELEPHONE DEPARTMENT

This department is in charge of Chief Electrician Charles C. Dale, and includes 3 permanent power plant operators and 1 permanent telephone operator.

The following table shows production of power plant at Mammoth and the distribution of current:

	1929-30	1931-32
Sold to park operators	78,392	76,426.6
Street lighting	30,344	32,083.0
Used by Government buildings for power and light	689,356	670,882.4
Total production in KW hours	798,092	779,392.0

The usual electrical and telephone maintenance work was carried out, and 528 miles of circuit and 181 telephones were maintained.

In order to improve the appearance of the north approach to the park, our telephone poles and wires were removed from the main street of Gardiner to a back street. The Gardiner campground outside the north fence was also removed to a less conspicuous location on the other side of the river.

BUILDING MAINTENANCE AND CONSTRUCTION

All carpenter work is under the supervision of Master Carpenter T. A. Bowman. All painting is under the supervision of Master Painter L. N. Tompkins. Two snowshoe cabins, a mess house and a bunk house at Old Faithful, addition to Lake Ranger Station and a lookout on Mount Holmes were constructed this year.

MECHANICAL DEPARTMENT

This department is in charge of Master Mechanic Robert R. Robinson, and includes 6 permanent mechanics, 1 permanent blacksmith, 2 temporary mechanics, and 2 temporary blacksmiths. New equipment and passenger-

The site of the bear feeding ground at Canyon Junction was transferred from the area back of the hotel to a new location on Otter Creek. This change involved the construction of three-quarters of a mile of road, installation of rustic seats for spectators, and the construction of a concrete feeding platform with the necessary water and sewerage facilities. Top view shows rustic seats while lower view shows platform and seats on hillside.

The work of the Sanitation Department included the construction of a new intake at Glen Creek and an incinerator at Mammoth, the former being built in the late fall and early winter under adverse weather conditions. Top view shows new intake while lower view shows Mammoth incinerator under construction.

carrying vehicles purchased during the year included the following: Trucks - one 2-ton, nine 1-½ ton, two 1/2-ton and four 1/4 ton; one passenger car, one scarifier, one oil distributor attachment and 1 1-yard concrete mixer.

PARK OPERATORS

Additional facilities completed or under construction during the year by the various public operators are as follows:

Yellowstone Park Lodge & Camps Company

Mammoth.- Reconstructed boiler house and laundry building destroyed by fire in October, 1930; constructed new main line water system into Mammoth Lodge, approximately 1,000 feet long, using about 850 feet of 8 inch pipe, and 150 feet of 6 inch pipe, placed between 6 and 7 feet below surface of the ground for fire use during winter; constructed and equipped small building for employees' laundry and small building for use as a fire house. Wired all cabins in housekeeping unit for electric lights; repainted and repaired 16 cabins. Old Faithful Housekeeping Camp:- Wired all log and frame cabins for electricity. Lake Fishing Bridge Housekeeping Camp:- Constructed flush toilet building, 16' x 30', inside measurement; erected small building for housing of fire equipment. Canyon Housekeeping Camp:- Constructed 14 permanent log and frame cabins; work started on building, approximately 20' x 40', for use as wood house and employees' laundry. Roosevelt Lodge:- Constructed 2 log and frame cabins - one 14' x 18' and one 14' x 30', equipped with running hot and cold water, bath tubs, toilet bowls and tanks, and lavatories. Miscellaneous:- Plans prepared for 2-story building at West Thumb, donwnstairs to be used as a housekeeping camp office and storeroom, and upstairs to be used as a dormitory for employees. Plans prepared for dormitory buildings, one to be erected at each lodge, size 32' x 90'.

Park Curio Shop

Mammoth.- Rest rooms and garages; camp cafeteria building enlarged and new equipment installed.

Yellowstone Park Hotel Company

Canyon.- Completed new wing of hotel. Lake.- Installed A. C. Generator for furnishing lights at Fishing Bridge.

Yellowstone Park Transportation Company

Purchased 6 new Ford roadsters and 8 14-passenger White buses.

C. A. Hamilton

Completed new Fishing Bridge store.

Two snowshoe cabins, a mess house and a bunk house at Old Faithful, addition to Lake Ranger Station and a lookout on Mount Holmes were constructed this year. Top view shows Fern Lake snowshoe cabin, constructed by contract. Lower view shows new general store constructed for C. A. Hamilton at Fishing Bridge.

The Yellowstone Park Transportation Company purchased six new Ford roadsters and eight 14-passenger White buses to add to its fleet. Two views of the new type of 14-passenger White bus, one taken in front of the administration building and the other in front of the Mammoth Hotel.

Henry Brothers

Completed new bath house at Fishing Bridge.

COOPERATING BUREAUS

The Bureau of Public Roads of the Department of Agriculture, the United States Public Health Service of the Treasury Department, the Bureau of Entomology of the Department of Agriculture, and the Bureau of Fisheries of the Department of Commerce have all cooperated to the fullest extent with officials of the National Park Service in Yellowstone Park during the year just closed.

POST OFFICE

The same organization was maintained as last year, namely: The main office at park headquarters (Mammoth Hot S prings) known as "Yellowstone Park, Wyo.", and five postal stations during the tourist season at Old Faithful, Lake Outlet, Fishing Bridge, Canyon, and Tower Falls, all under the jurisdiction of the main office and connected with it daily by star route which also served ranger stations, road camps, etc., along the route around the park. Old Faithful and Fishing Bridge are handled as classified stations, the other three as contract stations.

Statistics for the season to this date indicate a decided drop in business - about 13% in cancellations and about 28% in revenues. The most important contributing factor in the decrease in revenues is the dropping off in the number and size of parcels post packages presented for mailing, and merchants complain of a decided falling off in sales to visitors.

Records indicate an approximate average of 14,000 pieces per day outgoing mail, and as about 90% of these are postal cards, it is apparent that visitors send an average of about 4 post cards each, while making the park trip.

The amount of business at West Thumb appears to warrant the establishing of an additional contract postal station at that point, but it was not deemed advisable to recommend the necessary increased expenditure until business conditions in general have shown some improvement.

WEATHER

The following data are from observations taken at Mammoth by the U. S. Weather Bureau: The last four months of 1930 were all below normal in temperature. The first four months of 1931 were above normal, with average daily departures exceeding 5° during January and February. January was warmer than December, and was the third warmest January in the records of the station. While May fell below normal by 1.6°, both

The law enforcement activities of the ranger department resulted in the apprehension of several persons engaged in the sale of liquor in the park. Top view shows U. S. Commissioner John W. Meldrum (center) with two park rangers and result of one catch.

Lower view shows Mammoth Hot Springs chapel which was in use every Sunday during the summer season.

June and July were warmer than normal, with June the warmest month of that name in the last twelve years. The maximum temperature of the year, 92°, was registered on the 21st of July. The winter's lowest temperature was -4°, occurring November 19, the first below zero temperature of the season and the only one in November; and again on March 6 and March 27, the latter date being the latest upon which a temperature below zero was recorded during the winter. During December, January and February, the temperature remained continuously above zero.

September and October, 1930, were each above normal in the amount of precipitation. November and every month since received less than normal precipitation, with January showing a total of but 0.11 inch, the lightest on record, and February 0.25 inch, equalling the lowest recorded total for that month. A total of only 0.63 inch fell during December, January and February, the least on record for that period. The accumulated deficiency from November 1 to July 31 is 7.21 inches. The heaviest 24-hour precipitation in the twelve calendar months was 0.89 inch on October 7-8.

The snows began in September with a little over an inch. October snowfall amounted to 9.3 inches, two inches more than normal for the month. Snow was heavy in November, with a total of 21.6 inches for the month. A fall of 11.2 inches within 24 hours occurred on the 13th and 14th of November, the greatest amount for a day ever recorded in November. On the morning of the 14th the depth of snow on the ground was 13.0 inches, a greater depth on the ground than is shown by any preceding November records. At the close of the month the snow depth had decreased to only 10.5 inches. The continuance of so heavy a snow cover in the month of November was without precedent. All months thereafter until May received less than the average amount of snow. The maximum thickness of the snow blanket in December was 14.2 inches, on the 13th. The year 1930 closed with 11.0 inches on the ground. The persistence of a considerable snow cover, light precipitation notwithstanding, was noted in January and February as remarkable. At the end of January 9.0 inches remained on the ground, and at the end of February 7.1 inches. During March 11.3 inches fell, but this and the previous accumulation went off during the month, which closed with the ground bare. No snow has fallen since May.

From June 12 to July 21, a period of 40 days, the total rainfall was 0.07 inch. In the warmer months of the year the severity of this drought has been exceeded but once, and that was 34 years ago, in 1897.

MISCELLANEOUS

Vital Statistics.- There were two deaths due to accident and four due to natural causes, three births and 1 marriage.

Religious Services.- The Government Chapel at Mammoth Hot Springs was in use every Sunday during the park tourist season. Roman Catholic masses were held by a resident priest every Sunday morning at 6.00 and

Many prominent persons visited the park during the summer, including Ralph T. O'Neil, National Commander of the American Legion and Mamoru Kishi, member of the Japanese Parliament. Top view shows Commander O'Neil (right), with Assistant to the Superintendent Joseph Joffe. Lower view shows Mr. and Mrs. Mamoru Kishi.

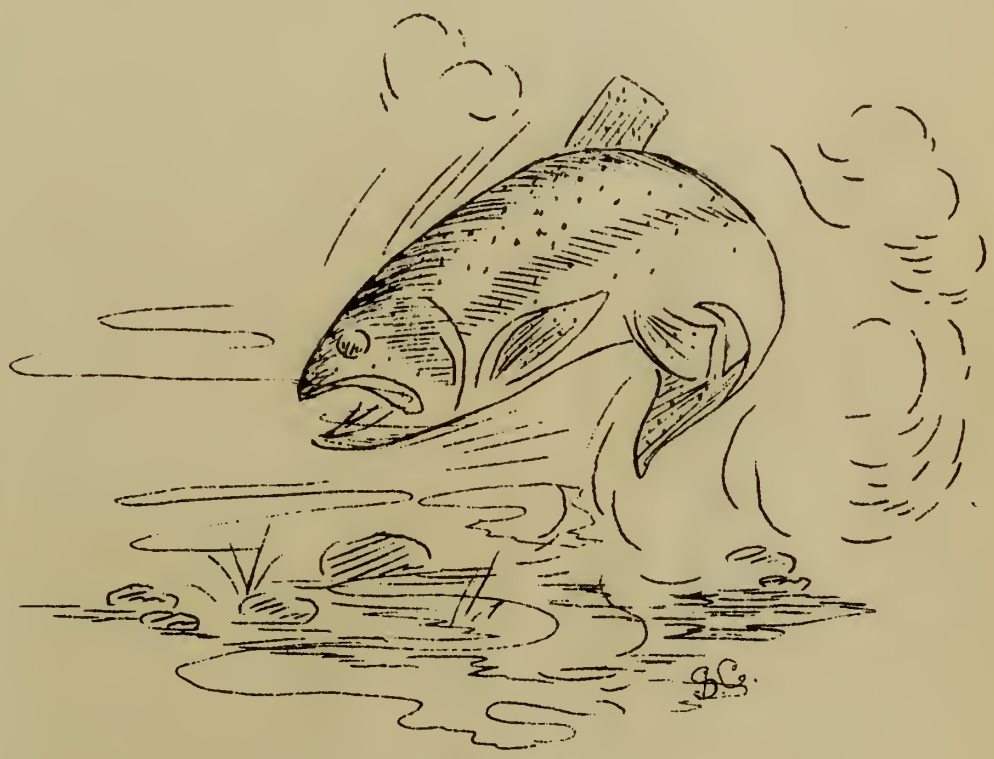
8.00 o'clock during July and August. Protestant services were held every Sunday morning at 10.30 and every Sunday evening at 8.00 o'clock, by ministers of various denominations from nearby points in Montana and Wyoming. Ministers of the Episcopal, English Lutheran, and Methodist denominations from Livingston, Montana, also visited the park and held services frequently during the winter months.

Visitors.- Many prominent persons visited the park during the summer, including the Secretary of Agriculture, Honorable Arthur M. Hyde; the former Secretary of the Interior, Honorable Hubert Work; the Assistant Secretary of the Interior, Honorable John H. Edwards; six United States Senators, Honorable James Couzens of Michigan, W. H. King of Utah, Arthur H. Robinson of Indiana, Frederick C. Walcott of Connecticut, Key Pittman of Nevada, and Reed Smoot of Utah; former U. S. Senator Patrick Sullivan of Wyoming; nine U. S. Congressmen, Honorable John Q. Tilson of Connecticut, Majority Leader of the House, Vincent Carter of Wyoming, Don B. Colton of Utah, Burton French of Idaho, William W. Hastings of Oklahoma, W. C. Lankford of Georgia, Joe J. Manlove of Missouri, Robert G. Simmons of Nebraska and William Williamson of South Dakota; former Congressmen Charles E. Winter of Wyoming and James H. MacLafferty of California; three Governors, Honorable J. E. Erickson of Montana, C. Ben Ross of Idaho and A. M. Clark of Wyoming; Ralph T. O'Neil, National Commander of the American Legion; Judge Edward S. Matthias, Commander in Chief of the Spanish War Veterans; Joe Barnett, National Chaplain of the American Legion; Prince and Princess of Siam; "Billy" Sunday, noted evangelist; and Floyd Gibbons, famous headline hunter, correspondent and radio broadcaster.

Other prominent visitors included: Horace M. Albright, Director of the National Park Service; R. Y. Stuart, Chief Forester of the U. S. Forest Service; Honorable Charles J. Rhoads, Commissioner of Indian Service; Sanford Bates, Director of the Bureau of Prisons; Harold C. Bryant, Assistant Director of the National Park Service; Dr. L. I. Hewes, Regional Director of Bureau of Public Roads; Will Hays, Head of the Mation Picture Industry; William C. Potter, President of the Guaranty Trust Company of New York; Major General William Crozier, Retired; Charles S. Krick, Vice President, Pennsylvania Railroad; Judge John A. Elmore, Commissioner, U. S. Court of Claims; Ernest H. Van Fossan, Member U. S. Board of Tax Appeals; Dr. Homer L. Shantz, President of Arizona University; Chase S. Osborn, former Governor of Michigan; Dudley G. Dwyre, U. S. Consul of Mexico City; Theodore A. Torgeson, Director, International Rotary; Dr. H. C. Bumpus, Chairman, National Parks Advisory Board on Educational Matters; Struthers Burt, Author and Dude Rancher; George T. Seabury, Secretary, American Society of Civil Engineers; Merle Thorpe, Editor, Nation's Business; Henry B. Joy, former President Lincoln Highway Association and Packard Motor Company; Thomas R. Shipp, National Advertiser; George F. Booth, Publisher, Worcester Telegram and Evening Gazette; Colonel W. J. Donovan, prominent attorney of Washington, D. C., with outstanding world war record; C. C. Teague, former member Federal Farm Board; Frank E. Cunningham, Clerk of Supreme Court of District of Columbia; Stephen T. Birch, President, Kennecott Copper Corporation; Roy A. Davies, prominent

Other prominent visitors included Floyd Gibbons, famous headline hunter, correspondent and radio broadcaster, who spent two weeks on a camping trip in the park, and W. H. Jackson, pioneer photographer of the 1871 Hayden Survey party. Top view shows Gibbons with a camp robber which became quite attached to him, and lower view shows Mr. Jackson at the Stephen T. Mather tree at Mammoth.

attorney of Washington, D. C.; Lewis L. Strauss, financier associated with Kuhn, Loeb & Company; J. Barstow Smull, President, New York C hamber of Commerce; Dr. S. A. Barrett, Director, Milwaukee Public Museum; Mamoru Kishi, member, Japanese Parliament; E. O. McLaughlin, President Union Hardware & Metal Company of Los Angeles; Mrs. S. Guasti, owner of largest grape vineyard in country; Wallace Beery, motion picture actor; W. H. Jackson, pioneer photographer of 1871 Hayden Survey Party; Harry E. Williams, author and special feature writer; Laura Gilpin, noted phtographer; Emilio L. Frugoni and Ricardo O. Thiele, Civil Engineers from Argentina; F. A. Kittredge, Chief Engineer of the National Park Service; and many prominent business, professional and scientific men and women.



For service rendered during the Chipmunk Creek fire, Floyd Gibbons was made an honorary member of the park ranger force. Top view shows Superintendent Toll pinning ranger badge on Gibbons while Director Albright looks on.

Lower view shows the effect of the depression on the bear population of the park, necessitating the cubs to pilfer food from the garbage cans.

3

ADDITIONAL TRAVEL FIGURES CONTINUED FROM PAGE FIVE

TOTAL SEASON TRAVEL BY ENTRANCES - 1931, 1930 and 1929
YELLOWSTONE NATIONAL PARK

1931

ENTRANCE	RAIL	*BY AUTOMOBILE		BY MOTORCYCLE		Walking Horseback etc.	Pre-Season Visitors	TOTAL VISITORS
	Visitors	Cars	Visitors	Cars	Visitors	Visitors		
North	6693	13311	32474	23	32	217	8798	48214
West	#8872	21407	63419	56	72	270	6738	79371
East	3203	21825	63230	67	100	147	4638	71318
South	## 161	7093	21257	13	15	43	869	22345
TOTAL	18929	63636	180380	159	219	677	21043	221248

1930

ENTRANCE	RAIL	*BY AUTOMOBILE		BY MOTORCYCLE		Walking Horseback etc.	Pre-Season Visitors	TOTAL VISITORS
	Visitors	Cars	Visitors	Cars	Visitors	Visitors		
North	9209	13419	36930	25	36	206	3618	49999
West	#12961	22478	71565	64	87	341	1464	86418
East	4585	20746	64825	70	103	203	----	69716
South	## 90	6765	21451	21	29	137	61	21768
TOTAL	26845	63408	194771	180	255	887	5143	227901

1929

ENTRANCE	RAIL	*BY AUTOMOBILE		BY MOTORCYCLE		Walking Horseback etc.	Pre-Season Visitors	TOTAL VISITORS
	Visitors	Cars	Visitors	Cars	Visitors	Visitors		
North	12243	13881	39198	40	50	484	3726	55701
West	#19213	23696	76897	40	44	271	603	97028
East	7233	23061	73732	78	96	244	---	81305
South	## 290	7777	24758	23	28	1479	108	26663
TOTAL	38979	68415	214585	181	218	2478	4478	260697

* Includes 6026 cars and 19,359 visitors who entered the park more than once during the season of 1931; 4,439 cars and 14,116 visitors who entered the park more than once during the season of 1930; and 4,459 cars and 14,111 passengers who entered the park more than once during the season of 1929. Also includes 7,141 cars, pre-season unclassified in 1931, 1,796 cars, pre-season unclassified in 1930, and 1,560 cars, pre-season unclassified in 1929; and 422 cars with 1,759 passengers, 1931 temporary employees of the Government and park operators, and 377 cars with 755 passengers, 1930 temporary employees.

\# The rail visitors accredited to the Western Gateway during the season of 1931 consist of 6,657 via the Union Pacific Railway, 1,261 via the Gallatin Gateway of the Milwaukee terminal, 331 via the Bozeman terminal of the Northern Pacific who also entered the park via the Gallatin route, and 623 temporary employees of the Government and park operators. The visitors accredited to the Western Gateway during the season of 1930 consisted of 10,271 via the Union Pacific Railway; 1,637 via the Gallatin Gateway of the Milwaukee terminal; 383 via the Bozeman terminal of the Northern Pacific who also entered the park via the Gallatin route; and 670 temporary employees of the Government and park operators. The rail visitors accredited to the Western Gateway during the season of 1929 consisted of 14,520 via the Union Pacific Railway; 3,128 via the Gallatin Gateway of the Milwaukee terminal; 401 via the Bozeman terminal of the Northern Pacific; and 1,164 temporary employees.

\## Includes 40 rail visitors entering via Victor, Idaho, on the Union Pacific System, and 121 entering at Lander, Wyoming, on the Chicago and Northwestern Railway during the season of 1931. Also includes 21 rail visitors entering via Victor, Idaho, on the Union Pacific System, and 69 entering at Lander, Wyoming, on the Chicago & Northwestern during the season of 1930, with 29 via Victor and 261 via Lander during 1929.

AUTOMOBILES BY ENTRANCE AND EXIT GATEWAYS

ENTRANCE	Exit Gateways: North	West	East	South	Total Cars Entering Park
North	2,880	3,011	3,265	984	10,140
West	2,851	6,768	6,863	2,528	19,010
East	4,387	7,555	4,915	3,452	20,309
South	630	2,208	3,434	501	6,773
Total Exit Cars	10,748	19,542	18,477	7,465	56,232

Employees' cars, unclassified..... 422
Pre-season cars, unclassified.....7141
Grand Total, all cars & motorcycles 63,795

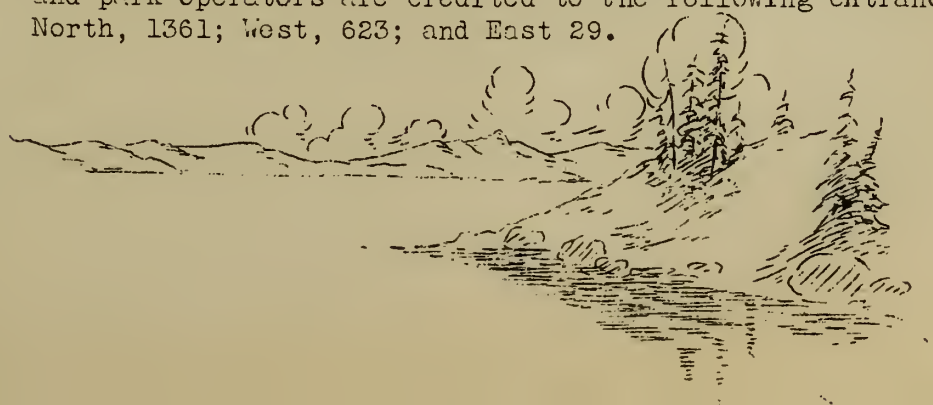
NOTE: Passengers are not counted as the cars are checked out, but the approximate number of passengers may be obtained by multiplying the number of cars by 3.15, the average number of persons per car entering the park.

RAIL TRAVEL BY ENTRANCE AND EXIT GATEWAYS

1 9 3 1

ENTRANCE	Exit Gateway: North	West: West Yellowstone	West: Gallatin Gateway	West: Bozeman	East	South	Victor	Unclassified	Total Entrance
NORTH	569	258	2	11	4217	0	2	273	5332
WEST									
W.Yellowstone	149	4613	59	2	1468	34	42	290	6657
Gallatin Gateway	11	311	715	2	180	4	0	38	1261
Bozeman	93	9	0	2	227	0	0	0	331
EAST	1315	819	67	48	820	10	33	52	3164
SOUTH	12	46	0	1	7	1	0	54	121
VICTOR	0	9	2	0	29	0	0	0	40
Total Exit Visitors	2149	6065	845	66	6948	49	77	707	16906
Temporary Employees									2023
GRAND TOTAL									18929

NOTE; The unclassified column shown above is composed of miscellaneous and deadhead travel. The temporary employees of the Government and park operators are credited to the following entrances: North, 1361; West, 623; and East 29.



STATEMENT SHOWING AUTOMOBILE TRAVEL BY STATES

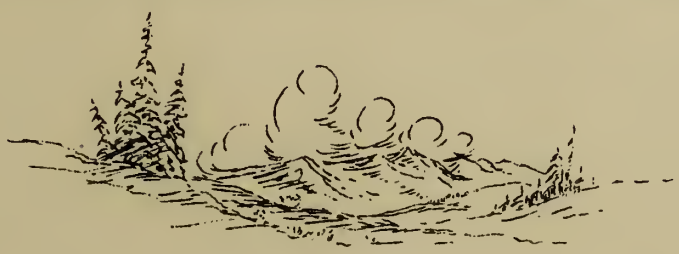
YELLOWSTONE NATIONAL PARK - SEASON OF 1931

STATE	NORTH		WEST		EAST		SOUTH		TOTAL	
	Cars	Pass.	Cars	Pass.	Cars	Pass.	Cars	Pass.	Cars	Pass.
Alabama	2	6	18	51	16	57	10	32	46	146
Arizona	36	110	115	333	52	149	24	74	227	666
Arkansas	8	25	30	111	37	106	16	59	91	301
California	959	2678	3246	9451	1510	4348	716	1983	6431	18460
Colorado	181	488	312	955	951	2825	521	1569	1965	5837
Connecticut	24	68	23	77	97	266	10	24	154	435
Delaware	5	18	3	5	8	20	1	2	17	45
Dist. of Col.	31	89	57	175	104	310	23	73	215	647
Florida	24	59	63	203	77	222	27	83	191	567
Georgia	15	53	37	201	24	72	3	10	79	336
Idaho	136	407	2421	9292	126	409	464	1673	3147	11781
Illinois	337	1027	543	1684	1900	5840	352	1124	3132	9675
Indiana	108	335	191	582	458	1455	116	339	873	2711
Iowa	209	649	284	933	1125	3626	183	577	1801	5785
Kansas	130	408	258	905	622	2017	278	884	1288	4214
Kentucky	12	34	44	177	89	273	30	93	175	577
Louisiana	5	11	28	90	48	171	18	59	99	331
Maine	8	28	16	58	21	55	3	7	48	148
Maryland	16	57	31	90	75	243	18	54	140	444
Massachusetts	40	105	101	297	183	508	29	77	353	987
Michigan	157	480	229	703	703	2034	110	331	1199	3548
Minnesota	429	1358	265	897	1016	3164	62	176	1772	5595
Mississippi	4	16	23	76	24	87	11	32	62	211
Missouri	102	295	212	715	632	1989	238	754	1184	3753
Montana	2305	7649	1961	6781	815	2743	116	351	5197	17524
Nebraska	135	409	161	502	827	2702	260	896	1383	4509
Nevada	15	53	100	327	13	31	31	93	159	504
New Hampshire	9	29	6	12	23	73	5	10	43	124
New Jersey	68	205	140	409	268	771	50	139	526	1524
New Mexico	9	32	41	105	36	112	28	74	114	323
New York	144	374	309	864	758	2180	164	484	1375	3902
North Carolina	23	103	30	103	25	80	16	65	94	351
North Dakota	223	723	147	514	257	868	20	67	647	2172
Ohio	145	437	403	1248	763	2244	202	625	1513	4554
Oklahoma	84	257	137	463	295	950	173	599	689	2269
Oregon	147	422	555	1720	201	620	77	249	980	3011
Pennsylvania	110	311	279	910	458	1370	112	329	959	2920
Rhode Island	6	18	14	44	17	47	4	12	41	121
South Carolina	6	19	21	74	9	33	7	18	43	144
South Dakota	105	314	98	316	440	1382	39	124	682	2136
Tennessee	9	34	41	153	62	194	13	41	125	422

STATEMENT SHOWING AUTOMOBILE TRAVEL BY STATES (Continued)

STATE	NORTH Cars	NORTH Pass.	WEST Cars	WEST Pass.	EAST Cars	EAST Pass.	SOUTH Cars	SOUTH Pass.	TOTAL Cars	TOTAL Pass.
Texas	104	309	256	811	408	1269	220	662	988	3051
Utah	162	522	2184	8035	99	295	418	1387	2863	10239
Vermont	3	12	5	15	11	36	3	9	22	72
Virginia	13	45	32	110	41	125	11	37	97	317
Washington	580	1780	806	2388	406	1279	115	326	1907	5773
West Virginia	13	36	26	87	52	147	17	61	108	331
Wisconsin	223	713	177	569	682	2119	79	239	1161	3640
Wyoming	126	348	156	520	1708	5837	848	2805	2838	9510
FOREIGN COUNTRIES & POSSESSIONS										
Alaska	3	9	5	13	2	6			10	28
Australia	1	1							1	1
Canada	332	1078	153	518	213	700	28	87	726	2383
Canal Zone	3	11	6	18	6	22	2	4	17	55
China							1	2	1	2
Cuba	1	2			1	2	1	2	3	6
Czechoslovakia	1	2							1	2
Guam							1	2	1	2
Haiti					1	4			1	4
Hawaii	10	27	14	45	12	37	4	15	40	124
Philippine Is.	1	4	1	5	1	3			3	12
TOTALS	8097	25092	16814	55740	12808	58527	6328	19903	50047	159262

Cars entering second trip, unclassified by states	6026	19359
Motorcycle, unclassified by states	159	219
Pre-season travel, unclassified by states	7141	21043
Employees entering by automobile, unclassified	422	1759
GRAND TOTAL ALL CARS & PASSENGERS, classified & unclassified	63795	201642



1931
TOURISTS REACHING PARK GATEWAYS BY RAIL AND ACCOMMODATED AT HOTELS AND LODGES

Classified by States

STATE	North Entrance Htls	North Entrance Ldgs	West Entrance Htls	West Entrance Ldgs	East Entrance Htls	East Entrance Ldgs	South Entr. Htls	South Entr. Ldgs	Gall'n Entr. Htls	Gall'n Entr. Ldgs	Boze'n Entr. Htls	Boze'n Entr. Ldgs	TOTAL Htls	TOTAL Ldgs	GRAND TOTAL
Ala.	2	10	8	37	9	6			1	2			20	55	75
Ariz.		2	4	8		1							4	11	15
Ark.	1	2	3	10	1	1					4		9	13	22
Calif.	60	50	385	203	49	24	22	14	10	13		3	526	307	833
Colo.	4	4	14	8	25	34							43	46	89
Conn.	44	31	54	40	41	8		1	1	4		11	140	95	235
Del.	10	7		9	2	6							12	22	34
D.C.	39	36	83	47	28	26	1	1	13	6			164	116	280
Fla.	3	7	15	41	2	10							20	58	78
Ga.	5	2	10	94	4	33			1	7			20	136	156
Ida.	4	3	4	11		1				1			8	16	24
Ill.	365	560	307	312	201	164	2	9	290	162	1	61	1166	1268	2434
Ind.	46	84	52	76	35	29			16	50		4	149	243	392
Iowa	6	105	8	56	20	48		1	30	23		27	64	260	324
Kans.	1	43	11	45	12	41			2	1		2	26	132	158
Ky.	8	29	17	64	6	12			4	9	1	1	36	115	151
La.	2	4	15	18	5	4							22	26	48
Me.	13	14	4	8	4	6							21	28	49
Md.	19	34	53	35	28	22	1		2	4	1	4	104	99	203
Mass.	149	86	83	60	85	32	1	14	11	25	4	6	333	223	556
Mich.	49	63	49	78	32	114	2	4	12	17	2	3	146	279	425
Minn.	80	152	2	25	12	27			12	41	1	18	107	263	370
Miss.		4	9	7	5	1			1				15	12	27
Mo.	149	145	69	146	79	140	1		4	14	3	8	305	453	748
Mont.	7	23	1	1	2	11			4	1	1	2	15	38	53
Nebr.	2	31	14	66	19	50	1	2		1		7	36	157	193
Nev.			2	3		2							2	5	7
N.H.	2	2	8	3	1				1	2			12	7	19
N.J.	114	137	191	273	156	64		8	21	13	3	4	485	499	984
N.M.		2		1	2	2							2	5	7
N.Y.	456	265	720	576	294	181		6	51	54	2	76	1529	1158	2687
N.C.	3	1	40	29		5							43	35	78
N.D.	7	17	2	3		4				1		4	9	29	38
Ohio	183	213	266	299	72	301	7	7	54	33		16	582	869	1451
Okla.	15	3	5	17	7	11		2			1	1	28	34	62
Oreg.	16	5	1	17	5	7		1	3	4		1	25	35	60
Pa.	200	353	346	297	55	100	5	7	23	50	2	7	631	814	1445
R.I.	13	17	8	6	1					5		3	22	31	53
S.C.	3	5	4	28	2	4							9	37	46
S.D.	1	2		2	3	4			8	3		2	12	13	25
Tenn.	3	6	19	44	8	10							30	60	90
Tex.	18	7	38	25	25	40	10	2		3			91	77	168
Utah			52	48		1		1					52	50	102
Vt.	3	9	1		4	2		1					8	12	20

1931

TOURISTS REACHING PARK GATEWAYS BY RAIL AND ACCOMMODATED AT HOTELS AND LODGES - Cont.

STATE	North Entrance Htls	North Entrance Ldgs	West Entrance Htls	West Entrance Ldgs	East Entrance Htls	East Entrance Ldgs	South Entr. Htls	South Entr. Ldgs	Gall'n Entr. HTs	Gall'n Entr. Lds	Boze'n Entr. Htls	Boze'n Entr. Lgs	TOTAL Htls	TOTAL Ldgs	GRAND TOTAL
Va.	11	7	16	57	1	14		2	3	4		2	31	86	117
Wash.	29	41	19	9	10	18		1	23	15			81	84	165
W. Va.	5	12	12	26		1			1	3	4		22	42	64
Wis.	74	115	66	70	28	31			70	60		6	238	282	520
Wyo.		2		7	6		2	3					8	12	20
TOTAL	2226	2752	3090	3345	1386	1653	61	87	670	631	30	279	7463	8747	16210
FOREIGN COUNTRIES															
Austra.				1										1	1
Belgium	2												2		2
Canada	11	21	13	9	2				8	7	1		35	37	72
China		2		2										4	4
Cuba					1								1		1
Czecho-slovak.			1										1		1
Denmark			2	1									2	1	3
England	4	3	12	8	4	1	1		1	2			22	14	36
France	1		1	1			2						4	1	5
Germany	3	1	5	1									8	2	10
Hawaii	2		9	1									11	1	12
Holland		9	4	2									4	11	15
Hungary				1										1	1
India	1				3								4		4
Japan	3		2	1	2				1				8	1	9
Mexico											1		1		1
New Zeal'd								1						1	1
Norway				1										1	1
Panama		2	2										2	2	4
South America	1			1									1	1	2
Scotl'd		6	3	1					1				4	7	11
Sweden		1		2										3	3
Switz'd	4		2		1					1			7	1	8
TOTAL	32	45	56	33	13	1	3	1	11	10	2		117	90	207
TOTAL CLASSI-FIED Rail TRAVEL	2258	2797	3146	3378	1399	1654	64	88	681	641	32	279	7580	8837	16417
TOTAL UNCLASSIFIED RAIL TRAVEL															* 2512
GRAND TOTAL.															18929

*NOTE: The unclassified rail travel shown below includes 2023 temporary employees of the Government and park operators credited to the following entrances: North 1361; West 623; and East 29.

Bound by the Western Museum Laboratories at Berkeley.

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